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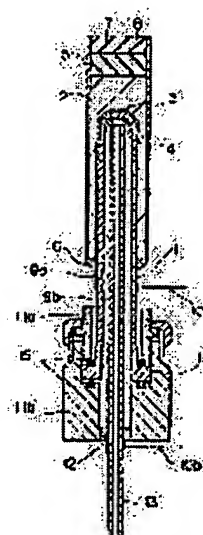
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(54) SENSOR PROBE HAVING SOLID REFERENCE MATERIAL

(57)Abstract:

PURPOSE: To measure the concn. of hydrogen or steam stably over a long period of time by using a material essentially consisting of aluminum phosphate as a solid reference material.

CONSTITUTION: A gas to be measured is supplied via an introducing pipe 13 into a sensor element 1 formed of a solid electrolyte and a closed end part disposed with the reference electrode 3 and measuring electrode 4 of the element 1 is heated to a prescribed temp. for measuring electromotive force. Then, proton moves between the inside surface of the solid electrolyte in contact with the gas to be measured and the outside surface of the solid electrolyte in contact with the solid reference material 2 essentially consisting of aluminum phosphate. Galvanic electromotive force is generated between the electrode 4 and the electrode 3 in this way. The concn. of the hydrogen or steam of the gas to be measured is detected by detecting this electromotive force. The reference material 2 maintains the partial pressure of the steam on the electrode 3 side approximately constant in this case. The gas to be measured is continuously supplied into the element 1. The concn. of the hydrogen or steam is continuously and stably measured in this way.



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